

muki, Oahu, by both Swezey and Timberlake (1919) and again by Mr. Swezey at Kailua, Oahu, XI-20-'28. There is a specimen in the Perkins Collection at the Bishop Museum labeled "a late introduction, Honolulu, 1908".

BOOK NOTICES

BY R. L. USINGER

(Presented at the meeting of September 5, 1935)

Wigglesworth, Insect Physiology

Another of the excellent series of "Methuen's Monographs on Biological Subjects," Insect Physiology by V. B. Wigglesworth, pp. 1-134, 13 illustrations, Methuen & Co., Ltd., 36 Essex St., W. C. London, 1934, price 3s. 6d., provides us with the first general treatise on one of the principal fields of entomology. This small book brings together all of the general principles of physiology of insects, treating them under the following eight chapters: Integument, Respiration, The Circulatory System and Blood, Digestion, Excretion, Nutrition and Metabolism, Reproduction and Growth, and The Nervous System, Sense Organs and Behavior.

In order not to obscure the general physiological principles it was necessary to exclude "all that was special and non-essential and to retain only that material which best illustrated the general theme". As a consequence one finds, in reading the chapter on some "pet subject", that the endless details which make the subject so fascinating are not mentioned. However, the extensive bibliography of almost three hundred titles, "most of them recent works which will introduce the student to the earlier literature", makes it possible for the reader to pursue any particular subject as far as he desires.

Such a book has long been needed by workers in every branch of our science and we are especially fortunate that such a leading authority has seen fit to take time from his absorbing research to perform the equally important task of making his information available to the general worker.

Snodgrass, Insect Morphology

The Principles of Insect Morphology, pp. 1-667, 319 figs., 1935, McGraw-Hill Book Company, Inc., N. Y., price \$6.00, is a detailed account of the morphology of insects interpreted in the light of embryology, anatomy, histology, palaeontology, and comparative morphology by one of the foremost authorities in this field in the world. R. E. Snodgrass is the author of many monumental works on morphology including his well-known "Anatomy and Physiology of the Honey Bee" and numerous papers on the morphology of various portions of the insect body published in the "Smithsonian Miscellaneous Collections". Written in characteristically readable style with a touch of the teleological point of view, the intricate structures and homologies of the parts of insects are marshalled before our eyes in an orderly and logical fashion. The function and method of functioning of each organ are given as well as the structure.

The material is arranged under nineteen chapter headings, the first being an introduction wherein insects are placed morphologically, and their relationship with other invertebrates pointed out. The second chapter, "General Organization and Development", gives a general view of embryological development with the ontogeny of each system. The remaining seventeen chapters are as follows: The Body Wall and its Derivatives; Body Regions, Sclerites, and Segmentation; Segmental Appendages of Arthropods; The Head; The Head Appendages; The Thorax; The Thoracic Legs; The Wings; The Abdomen; The Organs of Ingestion; The Alimentary Canal; The Organs of Distribution, Conservation and Elimination; The Respiratory System; The Nervous System; The Sense Organs; The Internal Organs of Reproduction; The Organs of Copulation and Oviposition.

Over three hundred remarkably clear and well chosen diagrammatic figures illustrate the text, greatly facilitating an understanding of the material presented. Other features include a glossary, at the end of each chapter, of terms applied to each part with their synonyms and, often, their German equivalents, a bibliography of twenty-one pages and an index of equal length.

An excellent lesson in the interrelationship of the various fields of entomology, this work calls upon many branches of our science in homologizing parts throughout the invertebrates. A terminology

is presented which conforms to the best modern usage. Homology of parts and a uniform terminology are certainly among the most important contributions of such a work. Fortunately they have been handled in masterful fashion due to the wide experience of the author and his familiarity with the literature. Students would do well to follow the conclusions and terms presented here, thus stabilizing our sadly confused anatomical terminology. Then later, if more exhaustive study shows that our ideas must be changed, uniformity may rightly give way to progress.

The Genus *Geocoris* in the Hawaiian Islands
(Lygaeidae, Hemiptera)

BY R. L. USINGER

(Presented at the meeting of November 7, 1935)

The genus *Geocoris* has not invaded insular areas to any great extent although it occurs in the Philippine Islands and on all mainland areas surrounding the Pacific. Other members of the great subfamily Geocorinae, however, have long been known from islands of Oceania where, in the Marquesas Islands, recent exploration has shown that *Germalus* reaches its peak, no less than seven species having been discovered there. The absence, until recently, of all members of the Geocorinae from the Hawaiian Islands has thus been a very remarkable thing. The first Hawaiian record of one of these "big-eyed bugs" was by Swezey (1936), based upon a specimen of *Geocoris punctipes* (Say) collected by him on *Cynodon dactylon* at Pearl City, Oahu, on Jan. 22, 1935. Two specimens have since been taken by Walter Donaghho on Ewa Coral Plain, Oahu, April 14, 1935 (see Swezey 1936). Recent collections by myself on the islands of Hawaii, Oahu, Manana, and Kauai are recorded in this paper and indicate that the genus has become firmly established here. It thus deserves a share of attention until its status as a beneficial or harmful group may be determined.